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At-Will America, Globalized R&D, and Physician Pay Under 2025 Policy Shocks: An International Medical Student's Evidence-Based Assessment

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Abstract

This paper synthesizes recent U.S. policy changes and labor-market realities to assess their implications for early-career physicians and **STEM professionals** trained in the United States and abroad. Using official statistics and primary documentation **(BEA, NSF/NCSES, AAMC, DOL, CBO, KFF, ABR, CAMPEP, and USMLE program materials**), I evaluate five claims that arise frequently in cross-border career discussions: (1)

whether U.S. at-will employment implies the absence of labor protections; (2) **whether U.S. multinationals have offshored the bulk of their R&D "brainpower"**; (3) **whether the USMLE's clinical emphasis disadvantages physicians relative to device-level biophysics**; (4) whether 2025 federal policy—universal tariffs, tighter immigration rules, and significant Medicaid reductions—alters physician compensation via payer-mix shocks; and (5) whether training in Europe vs. the United States dominates, net of costs and residency goals. The evidence indicates that U.S. labor law features substantial protections alongside at-will termination and **WARN-Act carve-outs**; that roughly **85% of U.S. MNC R&D** spending remains onshore; that device-physics depth is concentrated in radiology and medical physics curricula rather than USMLE; and that Medicaid cuts and tariff-immigration shocks are likely to pressure compensation in Medicaid-heavy or rural markets while leaving commercially heavy specialties less exposed. A pragmatic training strategy for international students emerges by aligning specialty and geography with payer mix, maintaining a publication record, and establishing an industry bridge (e.g., medical affairs) to mitigate policy risk.

Author Positionality & Context

Born in Ireland, of Indian origin, and raised in the United States, I am currently studying medicine in Budapest (English-language program) with a prior U.S. undergraduate background in chemistry and exposure to multiple training systems. This vantage point—spanning U.S., EU, and international contexts—motivates an evidence-based comparison of labor markets, medical training signals, and policy transmission into healthcare delivery. Where my experience may bias interpretation (e.g., an emphasis on payer mix for physician compensation), I state these assumptions explicitly.

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1. Motivation and Questions

Recent conversations among instructors and trainees—especially those with cross-border backgrounds—reveal persistent uncertainty about U.S. job stability, the location of "real" R&D, the scope of the USMLE, and how policy shifts in 2025 will impact physician compensation. This paper addresses the following questions:

1) Labor law: Does at-will employment mean employers can dismiss

employees without any obligations or limits?
2) R&D geography: Are U.S. firms shifting most intellectual work overseas?
3) Training signal: Does USMLE preparation under-equip physicians in device physics relative to engineering/medical-physics pathways?
4) Policy shocks: How do universal tariffs, stricter immigration, and federal Medicaid cuts affect health-system revenue and physician pay?
5) Training location: When is an English-language EU medical degree a rational route for U.S. practice or industry roles?

I use publicly available datasets and official documents to provide a neutral, evidence-based brief for students, advisors, and hiring managers.

2. U.S. Labor Law: At-Will, With Guardrails

At-will is the default in 49 states (Montana is an exception): an employer may terminate employment for any reason that is not illegal (e.g., discrimination, retaliation). This is often misinterpreted as “no labor law.” Federal and state protections govern wages and hours, health and safety, anti-discrimination, organizing rights, and family/medical leave. For large downsizings, the WARN Act requires many employers (generally those with 100 or more workers) to provide 60 days’ notice in qualifying plant closings or mass layoffs. Some states require separation paperwork for unemployment insurance, while a minority have service-letter rules on request. In short, the U.S. model trades dismissal flexibility for a thick web of topic-specific protections.

3. Where the R&D Actually Happens

Contrary to the claim that U.S. firms “moved the brainpower abroad,” official BEA data show that in 2023, U.S. multinationals spent $558.3 billion on R&D; about $476.6 billion (~85%) was performed by U.S. parents domestically and $81.7 billion (~15%) by foreign affiliates. The domestic U.S. STEM workforce numbered 36.8 million in 2021—24% of all workers—with ~19% foreign-born overall and around 43% foreign-born at the doctoral level, underscoring the system’s hybrid talent model. In Central/Eastern Europe, firms like Bosch and Ericsson operate large R&D

hubs in Budapest, and India continues to expand its global capability centers—evidence that R&D is networked, not hollowed out.

4. What the USMLE Signals—and What It Doesn't

The **USMLE suite (Step 1, Step 2 CK, Step 3)** is a sequence of clinical licensing exams. Its content outlines emphasize integrated foundational science and clinical reasoning. Detailed device physics (e.g., MRI gradients, CT reconstruction kernels, ultrasound beamforming, and laser-tissue interactions) is taught in diagnostic radiology (ABR Core) and in medical physics programs (CAMPEP-accredited), leading to ABR certification. Expect breadth on imaging indications/safety on USMLE; expect depth in residency or medical-physics training.
Cadaver dissection: recent surveys indicate continued high use of dissection alongside prosection and digital tools in U.S. schools.

5. Policy Shocks in 2025: Tariffs, Immigration, and Medicaid

In 2025, the federal policy mix includes a 10% baseline universal tariff with higher reciprocal rates for selected partners; stricter immigration enforcement; and a budget reconciliation law popularly known as the "**One Big Beautiful Bill Act (H.R. 1)"** that reduces federal Medicaid outlays over the next decade. The CBO attributes a short-run drag on growth and upticks in inflation/unemployment partly to tariffs and lower immigration. Independent health-policy analyses allocate roughly $880–$930 billion in 10-year federal Medicaid reductions, with a disproportionate impact in rural areas.
Mechanism to physician pay: Physician compensation tracks payer mix and negotiated rates, not patient wallets. On average, commercial insurers pay ~132–143% of Medicare for physician services; Medicaid typically pays below Medicare (ratios vary by state). When coverage declines and payer mix shifts toward Medicaid/uninsured, clinics and hospitals experience a decline in revenue per visit and collection rates, with a disproportionate

impact on rural and safety-net settings. Closures or service line cuts reduce demand for physician labor locally, softening pay.

6. Trade and Talent: BRICS Context

Universal tariffs operate as a consumption tax on imports and inputs; global models show higher prices and lower real output compared to the baseline, amplified by retaliation. The U.S. still holds decisive advantages—dollar primacy, capital markets, and the R&D base—but these hinge on a robust talent pipeline. Tight immigration policies dampen the margins (STEM PhDs, founder formation) where the U.S. has historically outperformed the BRICS. For trainees, the hedge is to combine U.S. clinical credentials with research productivity and industry-relevant skills that span multiple systems.

7. A Decision Framework for International Trainees

- End-goal U.S. residency (clinical): Train where you can build the strongest USMLE scores, letters, publications, and clinical exposure at an acceptable cost. If training in Europe, consider augmenting your training with U.S. electives and publishing in your target therapeutic area.
- Industry bridge (non-quota roles): Pharma/device sales (technical & scientific products): typical entry is a bachelor’s degree with on-the-job training; median pay ≈ $100k in the U.S. Medical Science Liaison (MSL): often expects a doctorate (MD/PharmD/PhD) and disease-area expertise; focuses on evidence/KOLs, not direct selling.
- Payer-mix hedging: If practicing clinically in the U.S., prioritize markets and specialties with healthier commercial payer mix or academic funding stability; if practicing abroad, target centers with industry collaborations and publish.

7.1 Specialty × Payer-Mix Risk Map (U.S. practice)

Illustrative; actual risk varies by local payer mix, contracting, consolidation, and state policy.

Specialty / Setting	Typical payer mix & revenue drivers	Exposure to Medicaid cuts	Risk of compensation

		& coverage loss	pressure
Dermatology (outpatient, elective; urban)	High commercial; self-pay/procedural cash-flow common	Low	Low
Orthopedic surgery (elective; urban)	High commercial; inpatient/outpatient bundles	Low–Medium	Low–Medium
Cardiology (procedural; tertiary center)	Mixed; substantial Medicare; private contracts	Medium	Medium
Radiology (hospital-based)	Mixed; Medicare/Medicaid/private; hospital budget sensitivity	Medium	Medium
Anesthesiology (hospital/ASC)	Mixed; facility-contract dependent	Medium	Medium
Emergency Medicine (ED; safety-net)	High Medicaid/uninsured; EMTALA uncompensated care	High	High
Family Medicine (FQHC/CHC, rural)	Medicaid/Medicare; grants; value-based payments	High	High
Pediatrics (community)	Medicaid-heavy	High	High
OB/GYN (rural hospitals)	High Medicaid births; malpractice overhead	High	High
Hospitalist (rural/community)	Medicare/Medicaid mix; staffing volatility	Medium–High	Medium–High
Psychiatry (outpatient)	Mixed; private/cash-pay	Low–Medium	Low–Medium

	options in metros		
Academic subspecialties (tertiary center)	Institutional funding & grants; mixed payers	Low–Medium	Low–Medium

8. Data and Methods

This is a descriptive policy analysis using official datasets (BEA, NSF/NCSES, AAMC, BLS), statutory and regulatory sources (DOL WARN, Congress.gov), certification bodies (USMLE, ABR, CAMPEP), and nonpartisan analyses (CBO, KFF, MACPAC). When multiple credible estimates exist (e.g., Medicaid reductions), researchers report ranges and note the underlying assumptions.

9. Findings in One Page (Practitioner Summary)

1) Labor: U.S. at-will ≠ , no protections. WARN notice applies to many mass layoffs.

2) R&D: ~85% of U.S. MNC R&D spend remains domestic; R&D is globally networked (Hungary/India nodes).

3) Training: USMLE signals clinical safety/competence; device-physics depth lives in radiology and medical-physics pipelines; cadaver dissection remains common.

4) Policy shocks: Tariffs + tighter immigration = near-term macro headwinds; Medicaid cuts concentrate risk in rural/safety-net settings.

5) Compensation: Follows payer mix—commercial >> Medicare > Medicaid—so geography/specialty selection matters more than exam content.

6) Strategy: Combine cost-efficient training, publications, and a portable industry skillset (e.g., medical affairs) to hedge.

10. Limitations and Next Steps

The analysis is national in scope; state-level Medicaid and scope-of-practice rules vary significantly. Consolidation, value-based contracts, and local labor market concentration also influence physician compensation.

Further work should quantify specialty-specific payer-mix elasticity under the 2025 law's implementation timeline and the tariff-linked input-cost pass-through to hospitals.

Acknowledgments and Disclosure

No external funding. No conflicts of interest. All errors are my own. This paper uses only publicly available information and does not constitute legal or financial advice.

SSRN Submission Kit

Title (SSRN): At-Will America, Globalized R&D, and Physician Pay Under 2025 Policy Shocks: An International Medical Student's Evidence-Based Assessment

Abstract (SSRN, ~200 words):
U.S. trainees and international physicians face conflicting claims about job stability, where "real" R&D occurs, what the USMLE actually signals, and how 2025 policy shifts will affect careers. Using official sources (BEA, NSF/NCSES, AAMC, BLS, DOL/WARN) and nonpartisan analysis (CBO, KFF, MACPAC), this paper tests five propositions: (1) at-will employment implies no labor protections; (2) U.S. multinationals have offshored most intellectual work; (3) USMLE preparation under-equips physicians in device-level physics; (4) universal tariffs, tighter immigration, and large Medicaid reductions will depress physician compensation; and (5) U.S. study strictly dominates European routes. Evidence shows robust federal/state protections alongside at-will and WARN carve-outs; roughly 85% of U.S. multinationals' R&D spending remains domestic; device physics depth belongs to radiology and medical-physics pipelines rather than the licensing exam; and Medicaid-heavy/rural settings face greater compensation pressure than commercially heavy specialties as coverage and payer mix shift. For international students, a pragmatic strategy is to align specialty and geography with payer mix, control training costs, publish early, and maintain an industry bridge (e.g., medical affairs). The analysis clarifies where policy helps or hurts and provides a one-page practitioner summary with a specialty × payer-mix risk map.

Keywords (SSRN): at-will employment; WARN Act; STEM workforce; R&D globalization; USMLE; Medicaid; tariffs; immigration; physician compensation; payer mix.
JEL: I18; I23; I22; J24; J38; F13; O31; K31.
Suggested SSRN eJournals: Health Economics eJournal; Labor: Human Capital eJournal; Industrial Organization: Regulation eJournal; International Trade eJournal; Law & Economics eJournal.

Author Bio (≤60 words): Siddhartha Harsh Wardhan is a medical student in Budapest with a U.S. chemistry background. His research focuses on higher-education governance, medical training signals, and health-economics transmission mechanisms (payer mix, reimbursement, and hospital finance). He publishes independent working papers to inform trainees and policymakers.

Disclosure: No funding; no conflicts of interest. This working paper uses public sources only and is not legal or financial advice.

Cover Letter (SSRN submission):
Dear SSRN Editorial Team,
Please consider the attached working paper for posting on SSRN. It synthesizes official datasets and nonpartisan analyses to clarify how U.S. labor law, globalized R&D, and 2025 policy changes propagate into physician compensation and training decisions. The manuscript includes an executive one-pager and a specialty × payer-mix risk map for practitioners.
Thank you for your consideration.
Sincerely,
Siddhartha Harsh Wardhan
Independent Researcher; Medical Student, Budapest, Hungary
[ORCID: add here]

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